ABSTRACT OF THE DISCLOSURE

A system for network accounting statistics collection including a statistics collector associated with each packet forwarding engine. Each statistics collector has one or more accounting elements, each of which includes some number of counters, such as packet and byte counters. Each statistics collector receives accounting instructions from the associated forwarding engine for packets processed by the forwarding engine, including packets that will be discarded without being forwarded. Each accounting instruction includes an identifier uniquely indicating one of the accounting elements, and information used to increment the counters within the accounting element. Upon receipt of an accounting instruction, the receiving statistics collector increments the counters in the accounting element. The accounting instruction is a relatively simple primitive operation in the disclosed system, enabling high-speed operation. Each statistics collector collects data over a fixed sampling interval that may range from a number of milliseconds to one or more minutes. Each sampling period begins with a reset of an accounting element store, and ends with at least one set of data being flushed to a management system for further processing and/or formatting.

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